



# ORION

NASA's Orion spacecraft will carry astronauts farther than humans have ever gone before. It will serve as the exploration vehicle that will carry the crew to deep space, provide emergency abort capability, sustain astronauts during their missions and provide safe re-entry back to Earth.

Orion features technology advancements and innovations that have been incorporated into the spacecraft's design. It includes crew and service modules, a spacecraft adapter and a revolutionary launch abort system that will significantly increase crew safety.

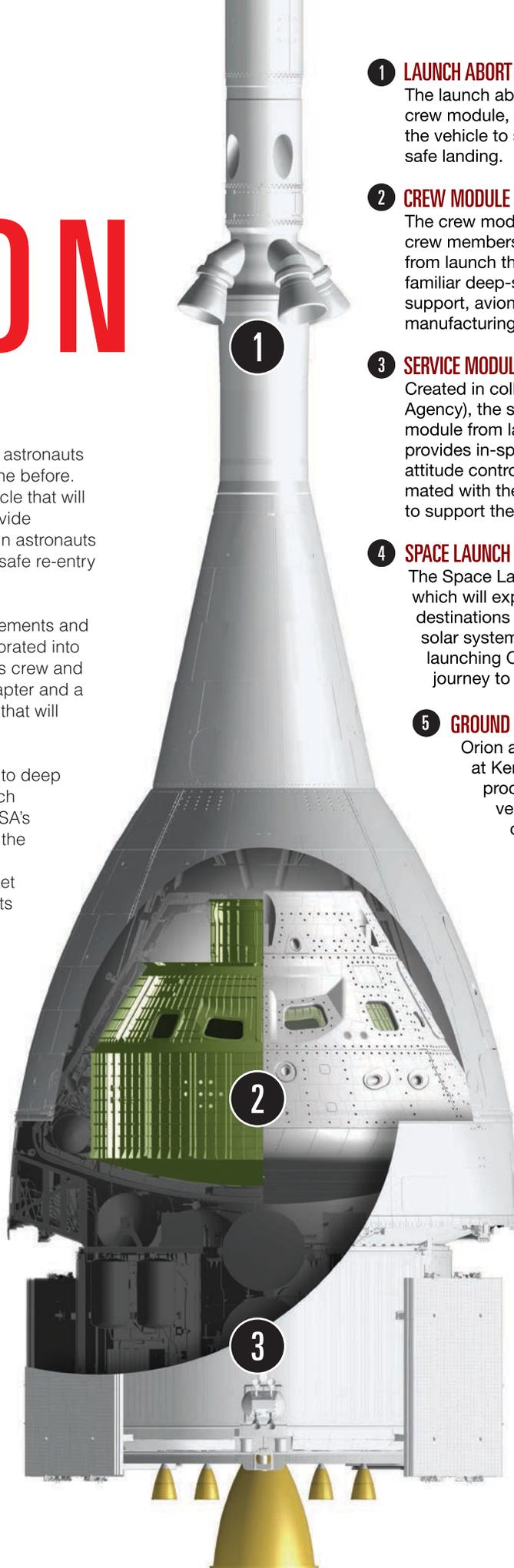
The rocket that will launch Orion into deep space is NASA's new Space Launch System (SLS). Launching from NASA's Kennedy Space Center in Florida, the agency's modernized spaceport, SLS will be the most powerful rocket ever built and will enable astronauts in the Orion spacecraft to travel deeper into the solar system.

Exploration Mission-1 will be the first integrated flight of Orion atop the SLS. During the 2018 mission, an uncrewed Orion will travel more than 40,000 miles beyond the moon in the lunar proving ground and return to Earth, traversing about 1.5 million miles total.

 [www.nasa.gov/Orion](http://www.nasa.gov/Orion)  
[www.nasa.gov/SLS](http://www.nasa.gov/SLS)  
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## 1 LAUNCH ABORT SYSTEM

The launch abort system, positioned on a tower atop the crew module, can activate within milliseconds to propel the vehicle to safety and position the crew module for a safe landing.

## 2 CREW MODULE

The crew module is capable of transporting four to six crew members beyond the moon, providing a safe habitat from launch through landing and recovery. Inside the familiar deep-space capsule shape are advances in life support, avionics, power systems, and advanced manufacturing techniques.

## 3 SERVICE MODULE

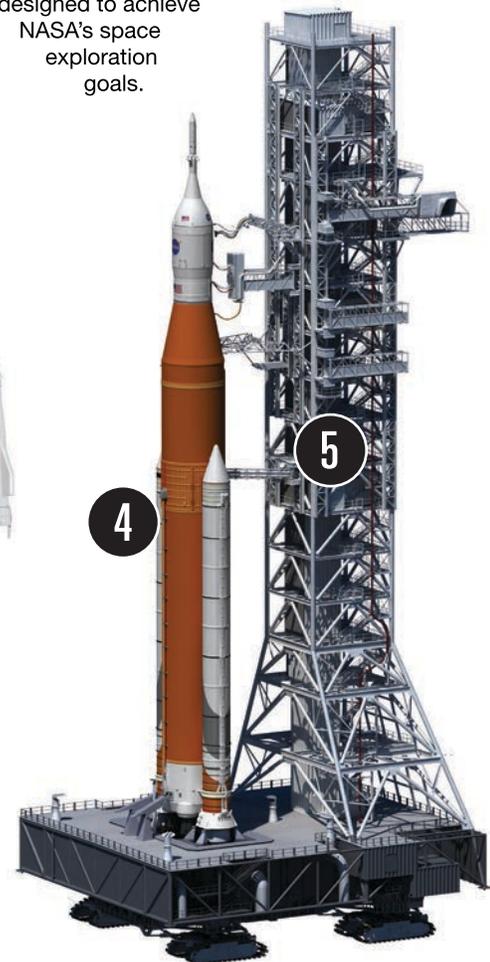
Created in collaboration with ESA (European Space Agency), the service module provides support to the crew module from launch through separation prior to entry. It provides in-space propulsion capability for orbital transfer, attitude control and high altitude ascent aborts. While mated with the crew module, it also provides water and air to support the crew.

## 4 SPACE LAUNCH SYSTEM

The Space Launch System is a powerful launch vehicle, which will expand human presence to celestial destinations beyond low-Earth orbit and throughout the solar system. This launch vehicle will be capable of launching Orion to asteroids, the moon and on the journey to Mars.

## 5 GROUND SYSTEMS

Orion and SLS will launch from launch complex 39B at Kennedy, where the center is being prepared to process and launch the next-generation vehicles and spacecraft designed to achieve NASA's space exploration goals.





**ORION CREW MODULE FIRST WELD**  
NASA Michoud Assembly Facility, Louisiana



**SLS LAUNCH VEHICLE STAGE ADAPTER CONE**  
NASA Marshall Space Flight Center, Alabama



**ORION CREW EGRESS TESTING**  
Neutral Buoyancy Lab, Texas



**SLS QUALIFICATION MOTOR TEST**  
Promontory, Utah



**ORION AIR DROP TEST**  
Yuma Proving Grounds, Arizona



**SLS RS-25 ENGINE TEST**  
NASA Stennis Space Center, Mississippi



**ERGONOMIC EVALUATION IN ORION MOCKUP**  
NASA Johnson Space Center, Texas



**ORION MOCKUP AT INTEGRATED TEST LAB**  
Denver, Colorado



**GROUND SYSTEMS MOBILE LAUNCHER**  
NASA Kennedy Space Center, Florida